OSGi Alliance IoT Vision

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The World of IoT is...

Relevant to many domains
  • Smart Home, Smart City, Vehicles, Agriculture, ...
  • Many customized solutions

Highly fragmented
  • 450 IoT Platforms in 2017 (Source: IoT Analytics)
  • Many companies start with building their own “Micro”-ecosystems

Growing Complexity
  • E.g. Smart Home is part of Smart Grid, Smart Grid is part of Smart City

Software is distributed
  • Sensor, Edge Devices, IoT Gateways, Clouds, ..
Standards are the only way to manage this growing complexity and diversity
Challenges and Requirements in Building IoT Solutions

• How to Avoid Vendor Lock-in
• Software Component Development & Maintenance
  • Adaption / Evolution of the runtime
  • Loss of knowledge base of legacy systems (dead sea effect)
• Integration of many heterogeneous systems
  • IoT Solutions / Platforms need to integrate with existing legacy systems
• Device Connectivity
  • Protocols: ZigBee, Bluetooth LE, OPC-UA,…
  • Device Abstraction Layers: oneM2M, W3C Web of Things, OSGi,…
  • Domain Specific Semantics: EEBus, AGORA,…
• Device Management & Software Management
• Security & Privacy
• Enable Developers to do Software Modularity the right way
  • Generically usable in e.g. IoT/Edge Gateways and Cloud Environments
  • Reusability of self-describing software components across physical borders
  • Ease of Integration of components provided by different suppliers
  • Prevents you creating new legacy systems, allowing to change your decision later
  • As Complexity is tamed - Total Cost of Ownership is reduced
  • Continue enhancing OSGi enRoute to get started
• Standardized way of doing **Device Management & Software Provisioning**  
  • **Specifications for TR-069 and OMA-DM** available since many years  
  • OSGi provides a standardized way to **manage requirements & capabilities**

• **Enabling Device Connectivity & Interoperability**  
  • **Standardized protocol adapters** for e.g. ZigBee, EnOcean, MQTT, etc.  
  • Interoperability to **device abstraction layers**, e.g. **oneM2M, W3C Web of Things**  
  • Interoperability with **Semantic Technologies like EEBus, AGORA, etc.**
How to manage requirements and capabilities with OSGi
Mapping of IoT Industry Alliances

Requirements | Specifications | Standards | Test & Certification | Open Source | Market Development | Commercial Incubation

Application

Application Enablers

Networking

IEEE/OSGi Liaison Workshop
Potential joint activities

- Mapping on IIC Requirements (e.g. from IIAR) vs. OSGi existing specifications
- Coordinate on definition of requirements for new OSGi specifications
- Cooperation on IIC Testbeds
- Joint white papers / best practices e.g. on implementation specific use cases at the Edge Tier
- Support industry by defining concrete implementation requirements in RFPs
- Coordinate to co-locate meetings once per year?